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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/754,169	01/03/2001	Koichi Tanaka	16869P-019200US	2772

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EXAMINER

MANOSKEY, JOSEPH D

ART UNIT

PAPER NUMBER

2113

DATE MAILED: 09/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/754,169	Applicant(s) TANAKA ET AL.	
	Examiner Joseph Manoskey	Art Unit 2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 2.

Claims 7 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chong, Jr., U.S. Patent 5,896,492, hereinafter referred to as "Chong", in view of Nelson et al., U.S. Patent 5,928,367, hereinafter referred to as "Nelson".

3. Referring to claim 7, Chong teaches a storage system with redundant components (See Fig. 5A) comprising a plurality of disk devices (See Fig. 5A and Col. 4, lines 41-42). The system is also comprised of a first controller with the first controller connected to a first host and a second host, also a second controller with the second controller connected to the second host and the first host. The two controllers act as backup controllers or stand-by controllers for each other (See Chong, Fig. 5A and Col. 4, lines 48-57). Chong also discloses a data link between two controllers (See Fig. 1B and Col. 1, lines 45-47) for communications between the two controllers. Chong teaches the second controller performing the data transferring for the first controller when the first controller is not functional and the first controller doing the same for the

second controller when the second controller is not functional, this is interpreted as configuring second standby port for data exchange between said first host and said disk devices based on configuration information about said first current port that is stored in said second controller (See Col. 5, lines 21-42).

Chong does not disclose specifically the first controller detecting an error condition and communicating an error condition to the second controller and the second controller configured to detect receipt of the error condition, however Chong does teach the second controller performing the data transferring for the first controller when the first controller is not functional and the first controller doing the same for the second controller when the second controller is not functional (See Col. 5, lines 21-42).

Nelson discloses a dual controller system for a disk storage system that exchange signal between each other to inform each other of their working status, this includes detecting failures so that immediate failover can occur (See Fig. 5 and Col. 3, lines 55-64).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the exchange of working status of Nelson of the dual redundant controllers with the failover system of dual redundant controllers of Chong. This would have been obvious to one of ordinary skill in the art at the time of the invention allows for immediate failover control for a disk storage system (See Nelson, Col. 2, lines 3-5).

4. Referring to Claim 9, Chong and Nelson disclose all the limitations (See rejection of claim 7) including the error indication being communicated via communication lines (See Nelson, Fig. 5, Col. 3, lines 55-64, and Col. 9, lines 58-65).

5. Referring to Claim 10, Chong and Nelson disclose all the limitations (See rejection of claim 7) including the use of a fibre channel for connecting the first and second controller to the first and second host (See Chong, Fig. 5B and Col. 3, lines 6-8).

6. Referring to Claim 11, Chong and Nelson teach all the limitations (See rejection of claim 7) including that the backup controller takes control of the data transfer until the primary memory controller has recovered (See Chong, Col. 1, lines 27-35). After the replacement, control would return to the primary memory controller. Further, Nelson teaches discloses the sending messages on working status that include one controller communicating to the other that it will be taking back master control with reply by the receiving controller (See Col. 9, lines 43-53).

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chong and Nelson in view of Richardson, U.S. Patent 6,219,753.

8. Referring to claim 8, Chong and Nelson disclose all the limitations (See rejection of claim 1) except for the controllers having a plurality of current ports and a plurality of

standby ports for connection to a plurality of hosts. Richardson teaches a controller with a plurality of active and inactive ports, this is interpreted as a plurality of current ports and a plurality of standby ports (See Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the plurality of ports of Richardson with the dual redundant controllers of Chong and Nelson. This would have been obvious to one of ordinary skill in the art at the time of the invention the inactive ports provide back up for the active ports in the event of failure of the one of the active ports (See Richardson, Col. 5, lines 58-59).

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chong and Nelson in view of Idleman et al., U.S. Patent 5,274,645, hereinafter referred to as "Idleman".

10. Referring to claim 12, Chong and Nelson teach all the limitations (See rejection of claim 11) except for the system further comprising a connection between the first host and first controller is a point-to-point connection and a fabric unit, and the second host and second controller has a point-to-point connection and a fabric unit.

Idleman discloses a storage system with a switch (See Fig. 3). This is interpreted as a point-to-point connection between the hosts and controllers and a fabric unit.

It would be obvious to one of ordinary skill in the art at the time the invention was made to combine switch of Idleman et al. with the storage system of Chong for connecting the hosts to the controllers. This would have been obvious to one of ordinary

skill in the art at the time of the invention to be lead to do this since it increases the reliability of the system by allowing a computer to access the disk drives through more than one path in the event that a component fails (See Idleman et al., Col. 8, lines 15-20). This would allow each of the controllers in Chong access to all the disk drives on their primary paths and also on their backup paths, which would increase the overall goal of reliability of the system.

Response to Arguments

11. Applicant's arguments, see pages 4-6 in Amendment, filed 12 July 2004, with respect to the newly filed claims 7-12 have been fully considered. The Examiner notes the arguments concern prior art cited in the rejections of now canceled claims 1-6 and the relationship to new claims 7-12. These arguments are found to be persuasive concerning the previously cited prior art, however, upon further consideration, a new ground(s) of rejection is made in view of Nelson (See above rejection).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Manoskey whose telephone number is (703) 308-5466. After Approximately October 15, 2004 the Examiner can be reached at the new Alexandria telephone number, (571) 272-3648. The examiner can normally be reached on Mon.-Fri. (8am to 4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (703) 305-9713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JDM
September 1, 2004


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